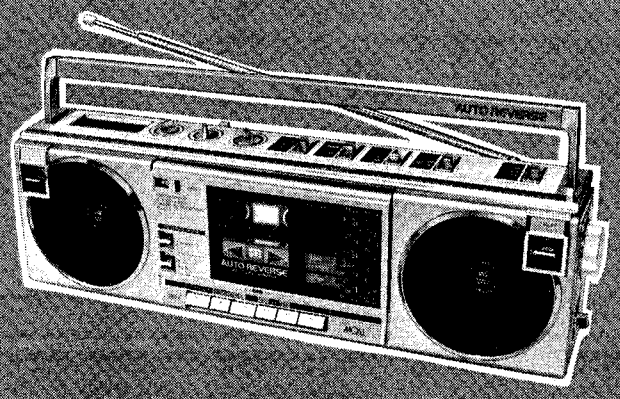
SERVICE DATA
FILE NO. 110-334

TOSHIBA

STEREO RADIO CASSETTE RECORDER

RT-SF5



SPECIFICATIONS

Cassette tape used:	Normal: C-30, C-60, C-90, C-120 Chrome: C-46, C-60, C-90 Metal: C-46, C-60
Tape speed:	4.8 cm/sec.
Track system:	Four-track two-channel stereophonic
Recording system:	AC bias (50 kHz)
Erasing system:	Multipolar magnet erasing
Frequency response:	Normal: 70 Hz to 14 kHz Chrome: 60 Hz to 15 kHz Metal: 60 Hz to 16 kHz
Receiving frequency:	FM: 88 MHz to 108 MHz SW_2: 7.5 MHz to 22 MHz SW_1: 2.3 MHz to 7.5 MHz MW: 525.5 kHz to 1606.5 kHz
Intermediate frequency:	FM: 10.7 MHz $SW_2/SW_1/MW$: 455 kHz
Antenna:	FM/SW_2/SW_1: telescopic antenna MW: ferrite-core antenna
Speakers:	100 mm (dia.) dynamic x 2 20 mm (dia.) piezo-electric type x 2
Jacks:	[MIC] jack x 2, Impedance 200 ohm to 2 kohm [AUX] jack x 2 [LINE OUT] jack x 1 [PHONES] jack x 1
Power supply:	AC 110 – 127 V/220 – 240 V, 50/60 Hz ..... VF
Power supply:	120/230V AC, 50/60 Hz .....TA
Power supply:	120V AC 60 Hz ..... TC
Power supply:	240V AC 50 Hz ..... AY
	DC 9 V IEC R14 "C" size x 6
Output power:	3W x 2, 10% Distortion
Power consumption:	15W.....TA, TC, AY 10W.....VF
Dimensions (W x H x D):	425 x 134 x 79 mm
Weight:	2.4 kg (without batteries)

Specifications are subject to change without notice.

TA, TC, AY, VF

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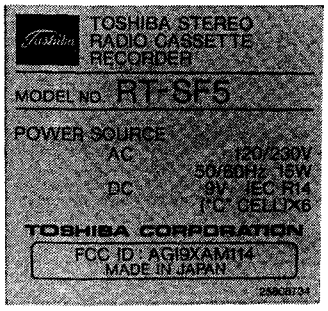
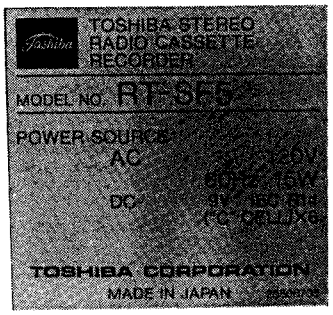
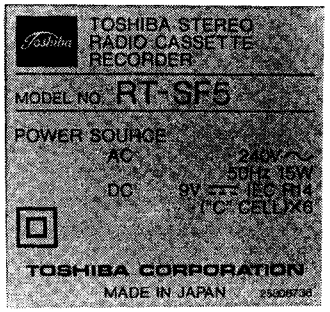


TA

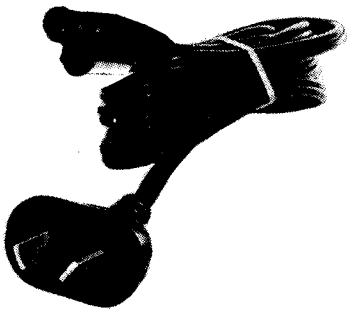


TC

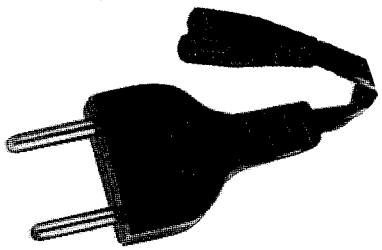


AY

TA, TC



AY



VF

1. OPERATING CONTROLS

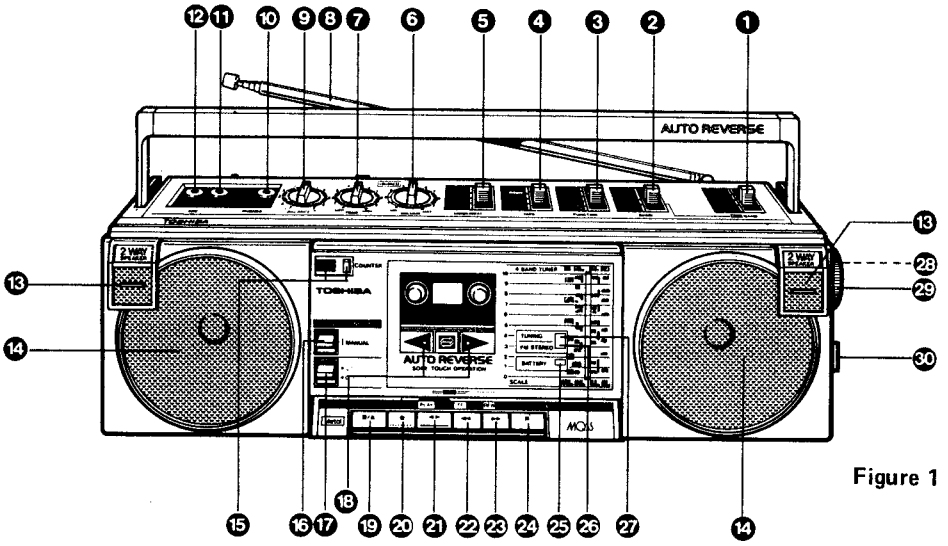


Figure 1

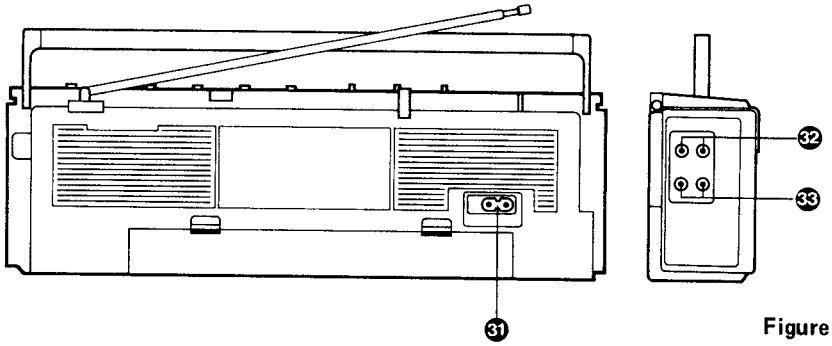


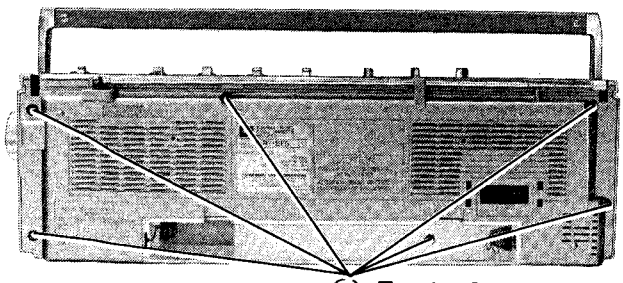
Figure 2

❶ [AM BAND] Selector
❷ [BAND] Selector
❸ [FUNCTION] Selector
Note: In the RADIO OFF/TAPE position the mains power will still be supplied. Therefore, when not in use unplug the cord from the socket.
❹ [TAPE] Selector
❺ [MODE/BEAT] Selector
❻ [VOLUME] Control
❼ [TONE] Control
❽ Telescopic Antenna
❾ [BALANCE] Control
❿ [PHONES] Jack
⓫ [MIC/R] Jack
⓬ [MIC/L] Jack
⓭ Tweeter Speakers
⓮ Woofer Speakers
⓯ Tape Counter/Counter Reset Button
⓰ Manual Reverse Switch
⓱ Auto Reverse Switch
⓲ Tape Running Direction Indicators
⓳ [STOP/EJECT] Button
⓴ [ONE TOUCH REC] Button
㉑ [PLAY] Button
㉒ [FF/REW] Button
㉓ [REW/FF] Button
㉔ [PAUSE] Button
㉕ [BATTERY] Indicator
㉖ [FM STEREO] Indicator
㉗ [TUNING] Indicator
㉘ Built-in Microphone
㉙ [TUNING] Knob
㉚ [FINE TUNING] Knob
㉛ [AC POWER] Socket
㉜ [AUX] Jack
㉝ [LINE OUT] Jack

2. DISASSEMBLY INSTRUCTIONS

■ FRONT CABINET REMOVAL

1. Remove the battery cover.
2. Remove 6 screws (A) securing the Cabinet back.
3. Remove 7 Knobs (B) and (C) at the top of the cabinet, and push the cassette taking out button (D) to open the cassette compartment cover.
4. Detach the front cabinet with the lower part raising.
5. Remove the speaker cord.



(A) Tapping Screw
3d x 35mmℓ BID (Black)

Figure 3

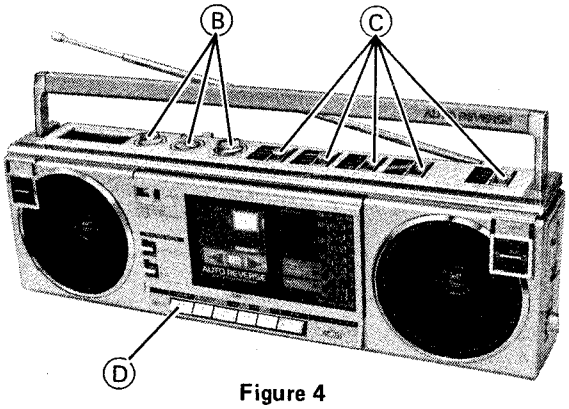
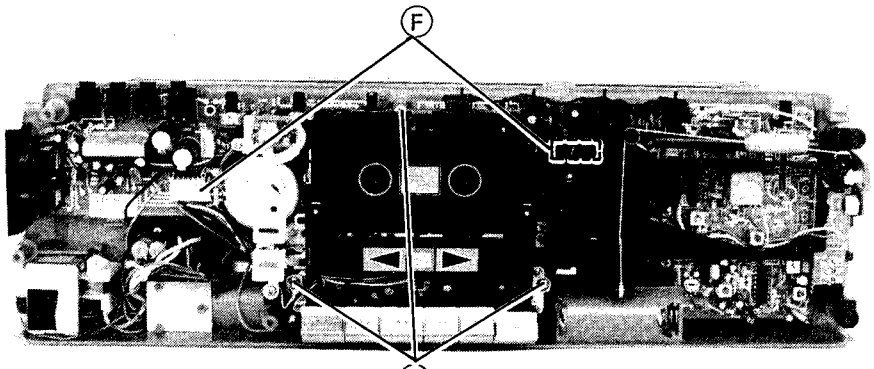


Figure 4

■ MECHANISM DISASSEMBLY

1. Remove 3 screws (E) securing the mechanism.
2. Remove 2 connectors (F) connected to the P.C. board to remove the mechanism.



(E) Tapping Screw
3d x 20mmℓ BID (Red)

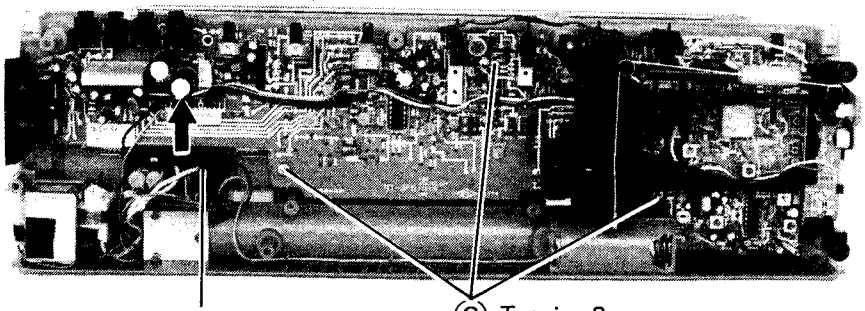
Figure 5.

■ P.C. BOARD REMOVAL

1. Remove the lead wire of the rod antenna.
2. Remove 3 screws (G) securing P.C. board and detach the board with it raising from the power transformer side.

■ BUILT-IN MIC. P.C. BOARD REMOVAL

Remove hooks for tuner frame to detach the board.



Power Socket

(G) Tapping Screw
3d x 10mmℓ BID

Figure 6.

3. METHOD OF P.R.C. REPAIRING

Cut defective printed-resistor-circuit off with knife. See Figure 7. Solder the replacement resistor (See replacement resistor parts list) on the opposite side of printed-circuit-board. See Figure 8.

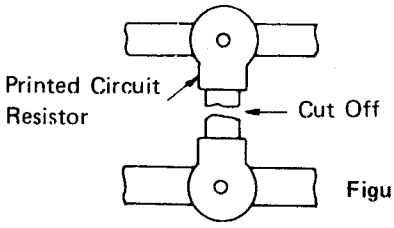


Figure 7.

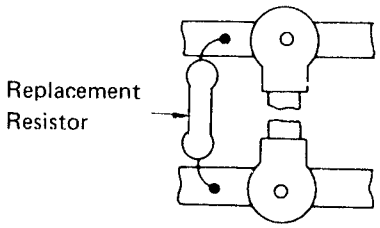
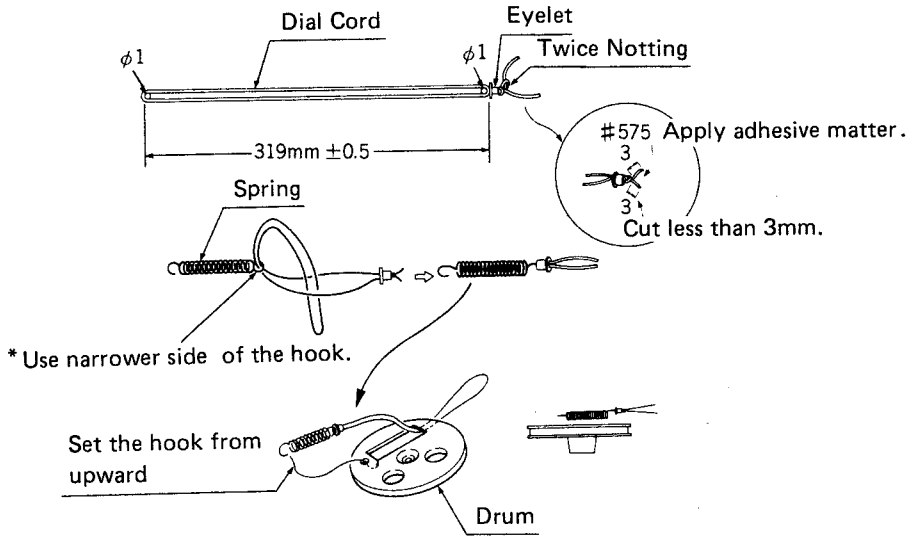


Figure 8.

4. DIAL CORD RESTRINGING

■ DIAL CORD RESTRINGING

1. After notting, pass the dial cord through the spring.
2. Mount the drum on the shaft of the variable capacitor with a screw (ϕ1.7)
3. Pass the dial cord through the opening of the drum. (Never hook the spring to the drum.)
4. Turn the shaft of the variable capacitor fully clockwise.
5. Wind the dial cord in numerical order and also install the pointer.
6. Hook the spring to the drum.
7. Turn the tuning shaft counterclockwise, then set the pointer to the "0" position of the dial plate.



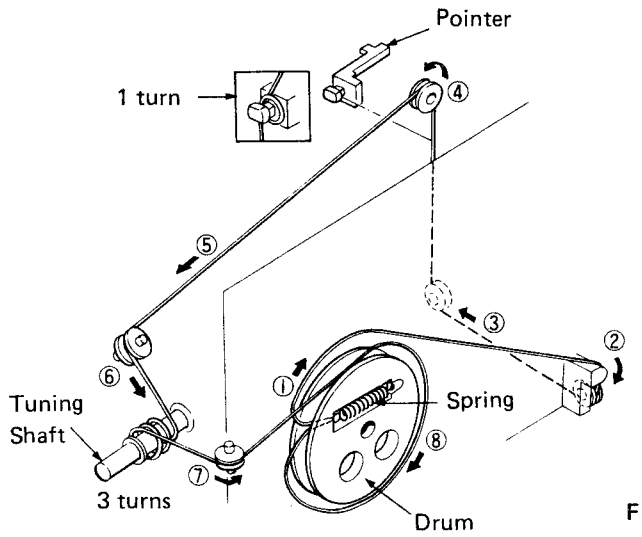


Figure 9.

6. ALIGNMENT INSTRUCTIONS

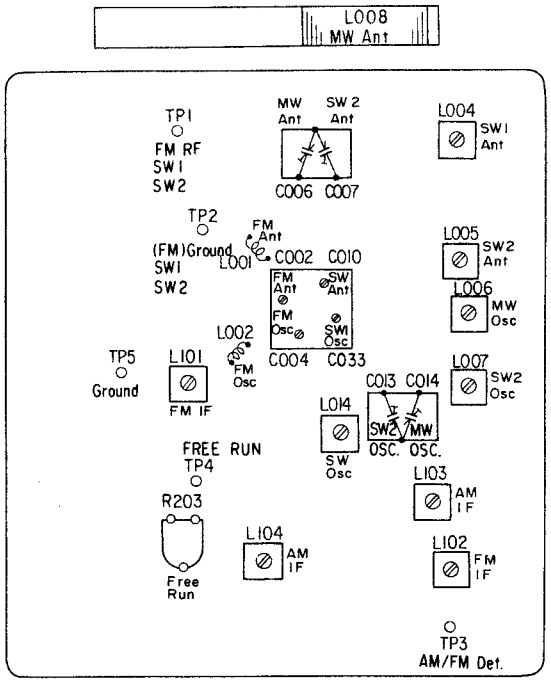


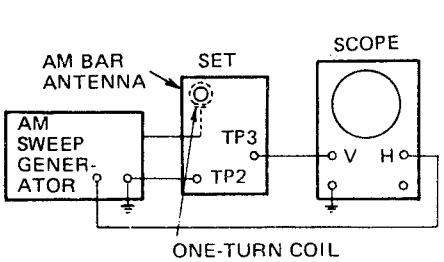
Figure 10.

TEST EQUIPMENT

1. Signal generator with a frequency range of at least from 450 kHz to 23 MHz AM.
2. Oscilloscope with a side range amplifier of approximately 100 kHz.
3. Test loop – a coil of any size wire, one turn or more. (MW)
4. A 30 ohm dummy antenna. (SW1, SW2)
5. VTVM

AM ALIGNMENT

1. Turn on the AM signal generator and the VTVM allowing a fifteen-minute warm-up period.
2. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio.
3. Connect the VTVM across the voice coil or a 3.2 ohm dummy load.
4. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
5. Set volume control at mid-position.
6. Proceed as outlined in the IF-MW, SW1 and SW2 ALIGNMENT CHART.



AM 455 kHz

Figure 11.

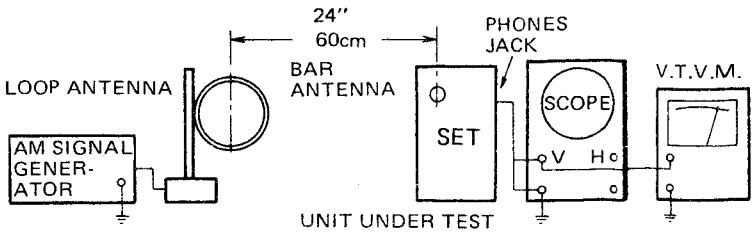


Figure 12.

MW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
IF	1	455 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	L103 L104	Adjust for maximum indication.
MW	2	510 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. coil L006 (MW)	Adjust for maximum indication.
	3	1650 kHz	Tuning Gang Fully clockwise (Highest Frequency)	OSC. Trim C014	Adjust for maximum indication.
	4	Repeat steps 2 and 3 as required.			
	5	600 kHz	Tune to Signal.	Ant. Coil L008 (MW)	Adjust for maximum indication.
	6	1400 kHz	Tune to Signal.	Ant. Trim. C006	Adjust for maximum indication.
	7	Repeat steps 5 and 6 as required.			

SW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
SW1	1	2.25 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L014 (SW1)	Adjust for maximum indication.
	2	7.7 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C033	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	3 MHz	Tune to Signal.	Ant. Coil L004 (SW1)	Adjust for maximum indication.
	5	7 MHz	Tune to Signal.	Ant. Trim. C010	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			
SW2	1	7.35 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L007 (SW2)	Adjust for maximum indication.
	2	22.5 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C013	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	9 MHz	Tune to Signal.	Ant. Coil L005 (SW2)	Adjust for maximum indication.
	5	20 MHz	Tune to Signal.	Ant. Trim. C007	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			

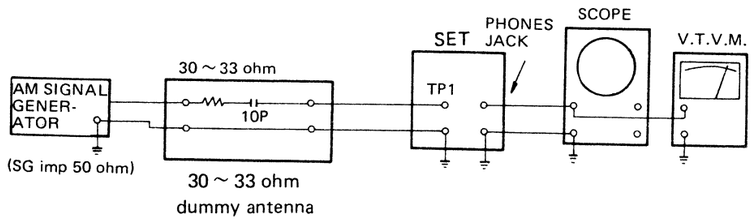


Figure 13.

FM-IF ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT from the signal generator through the loop antenna to the receiver.
4. Connect the oscilloscope vertical input directly to the test point TURN OUT H and connect the shielded lead to the test point E or chassis ground.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

FM-IF ALIGNMENT CHART

Step					Adjust. point	
1	Connect sweep generator output to a three-turn loop antenna of 10cm diameter.	Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker.	Tuning Knob fully counter-clockwise (Lowest Frequency.)	Set scope for connecting output signal from TUN OUT to vertical axis of scope "V" and sweep generator output to horizontal axis "H".	L101 L102	Turn the IF Transformer L102 fully counterclockwise to obtain a single peak. Adjust coil L101 in order until the best single peak is obtained. Figure 15. Finally turn the coil L102 to obtain S curve. See Figure 16.

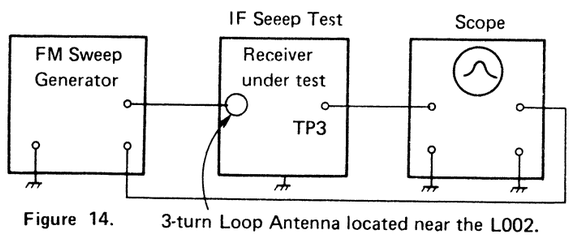


Figure 14.

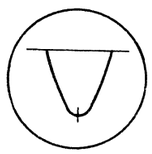


Figure 15.

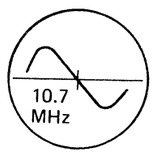


Figure 16.

FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna across FM ANT.
3. Connect the VTVM across the voice coil or a 3.2 ohm dummy load.
4. Set the volume control to mid-position.
5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RM ALIGNMENT CHART.

FM-RF ALIGNMENT CHART

Step	Signal Generator	Radio Dial Setting	Adjustment	Remarks
1	87.3 MHz	Tuning Knob fully Counterclockwise (Lowest Frequency)	OSC. Coil L002	Adjust for maximum output indication
2	109 MHz	Tuning Knob fully Clockwise (Highest Frequency)	OSC. Trim. C004	Adjust for maximum output indication
3	Repeat steps 1 and 2 as required.			
4	90 MHz	Tune to signal	Ant. Coil L001	Adjust for maximum output indication
5	106 MHz		Ant. Trim. C002	
6	Repeat steps 4 and 5 as required.			

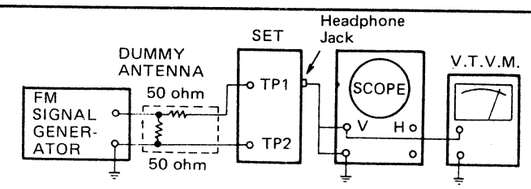


Figure 17.

FREE RUN FREQUENCY ALIGNMENT

Adjust R203 under no signal condition so as to obtain 38 kHz ± 75 Hz.

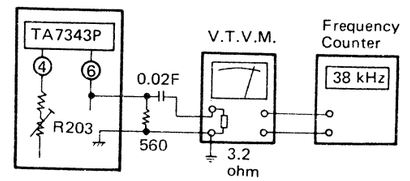


Figure 18.

RECORD/PLAYBACK HEAD ADJUSTMENT

Adjust azimuth with a test tape of 10 kHz (MTT-114) so that the Left Channel is maximum, then lock the section with screw.

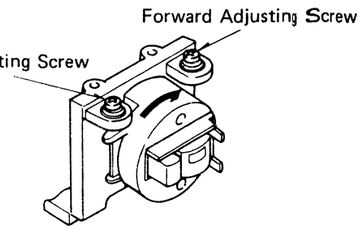


Figure 19.

TAKE-UP TORQUE

1. Insert cassette torque meter (HARTAK X-87 Torquette).
2. Press PLAY button and read torque meter. Torque should be 28 to 52 gcm.
3. Release PLAY button and press REWIND button. Torque should be 75 to 125 gcm. If necessary, clean take-up reel or drive belt with alcohol, or replace belt.

6. ELECTRICAL PARTS LOCATIONS

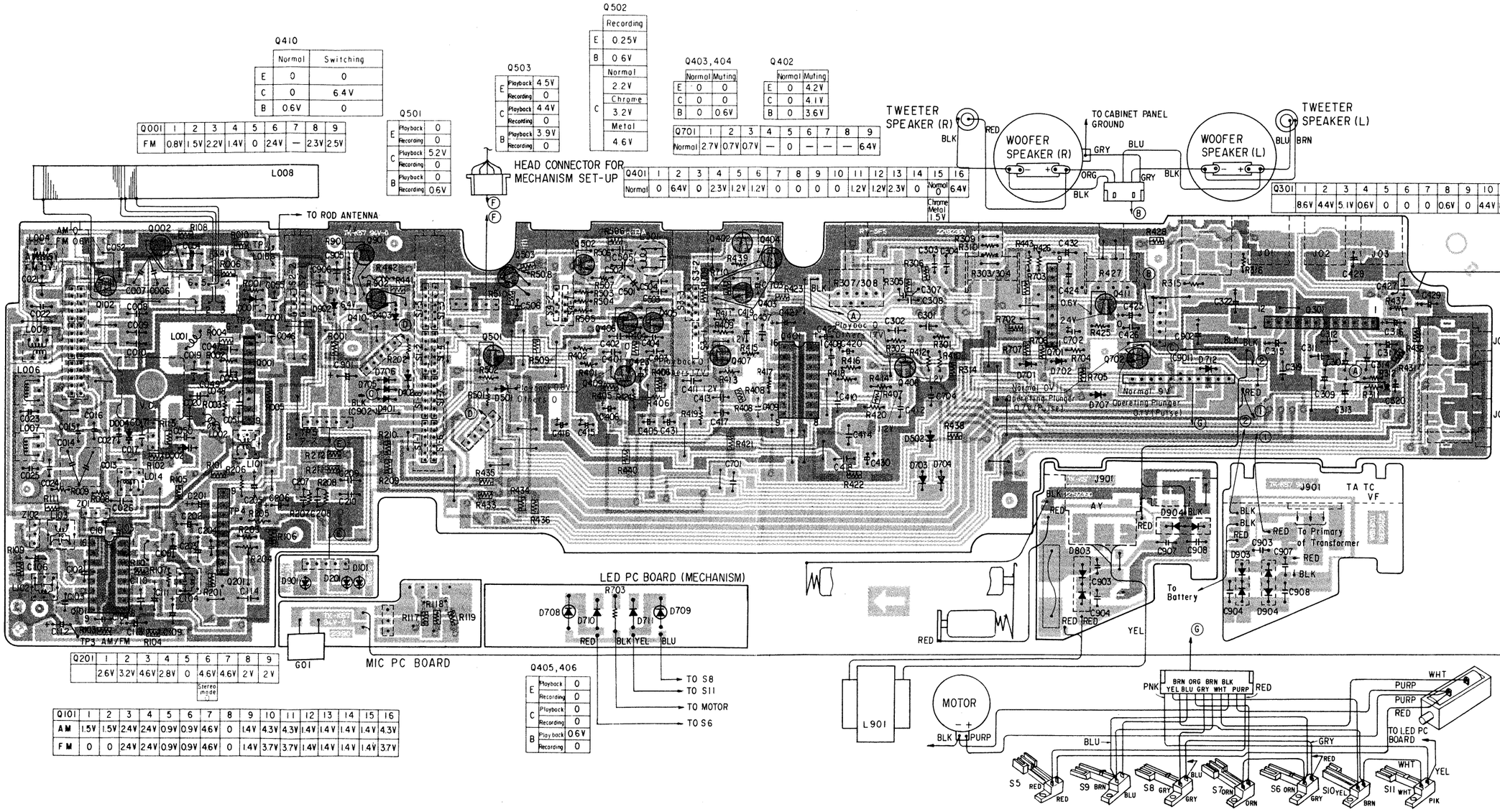


Figure 20.

7. SCHEMATIC DIAGRAM

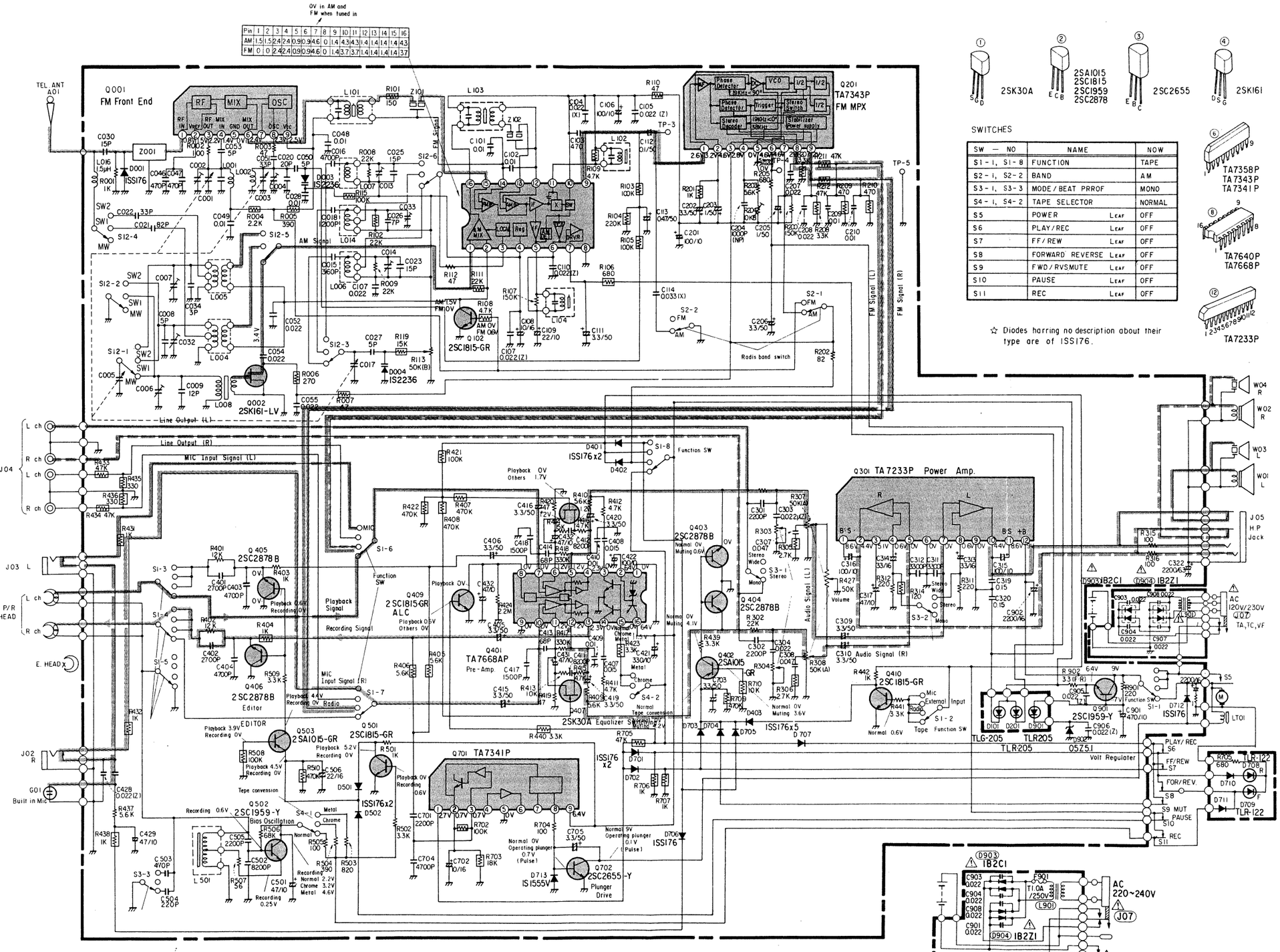
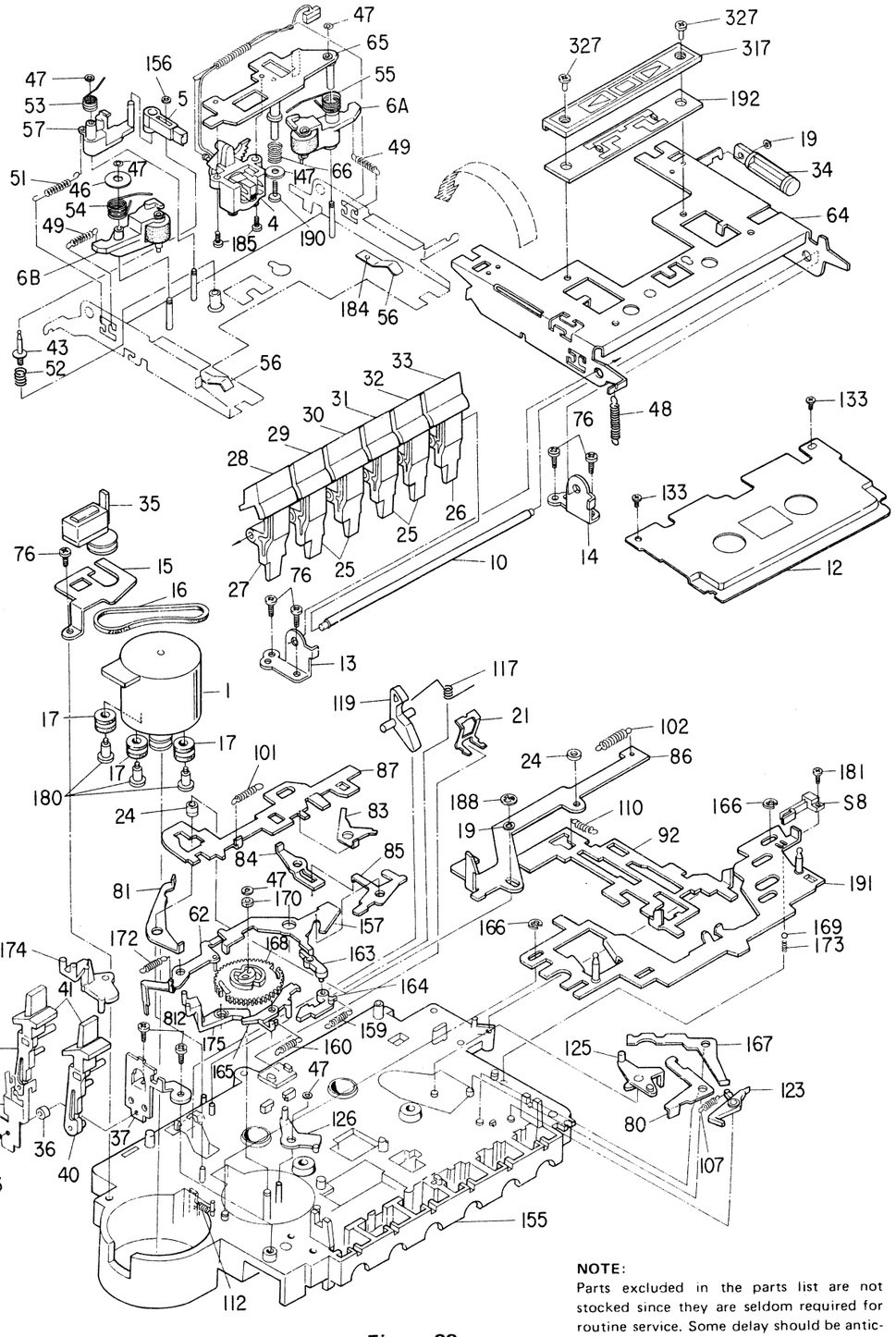

0V in AM and FM when tuned in
Pin 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
AM 1.5 1.5 2.4 2.4 0.9 0.9 4.6 0 1.4 4.3 4.3 1.4 1.4 1.4 1.4 4.3
FM 0 0 2.4 2.4 0.9 0.9 4.6 0 1.4 3.7 3.7 1.4 1.4 1.4 1.4 3.7
TEL ANT A01
Q001 FM Front End
RF MIX OSC
Z001
Q002 2SK161-LV
Q201 TA7343P FM MPX
Phase Detector VCO 1/2 1/2
Phase Detector Trigger Stereo Switch 1/2
Stereo Decoder 38KHz 19KHz-CUT 50KHz Stabilizer Power supply
Q401 TA7668AP Pre-Amp.
Q403 2SC2878B
Q404 2SC2878B
Q405 2SC2878B
Q406 2SC2878B Editor
Q409 2SC1815-GR ALC
Q410 2SC1815-GR
Q501 2SC1815-GR
Q502 2SC1959-Y Bias Oscillation
Q503 2SA1015-GR
Q701 TA7341P
Q702 2SC2655-Y Plunger Drive
Q301 TA7233P Power Amp.
Q102 2SC1815-GR
Q402 2SA1015-GR
FM Front End
FM Signal
AM Signal
FM Signal (L)
FM Signal (R)
Line Output (L)
Line Output (R)
MIC Input Signal (L)
MIC Input Signal (R)
Recording Signal
Playback Signal
Audio Signal (L)
Audio Signal (R)
Radio band switch
Function SW
Volt Regulator
TLG-205 TLR205 TLR-205 0525.1
TLR-122
ISS176 x2
ISS176 x5
IS2236
IS1555V
1B2C1
1B2Z1
TA7358P TA7343P TA7341P
TA7640P TA7668P
TA7233P
2SK30A
2SA1015 2SC1815 2SC1959 2SC2878
2SC2655
2SK161
SWITCHES
SW — NO | NAME | | NOW
S1-1, S1-8 | FUNCTION | | TAPE
S2-1, S2-2 | BAND | | AM
S3-1, S3-3 | MODE/BEAT PRROF | | MONO
S4-1, S4-2 | TAPE SELECTOR | | NORMAL
S5 | POWER | Leaf | OFF
S6 | PLAY/REC | Leaf | OFF
S7 | FF/REW | Leaf | OFF
S8 | FORWARD REVERSE | Leaf | OFF
S9 | FWD/RVSMUTE | Leaf | OFF
S10 | PAUSE | Leaf | OFF
S11 | REC | Leaf | OFF
☆ Diodes harring no description about their type are of ISS176.
AC 120V/230V Q07 TA,TC,VF
AC 220~240V J07
AY

Figure 21.

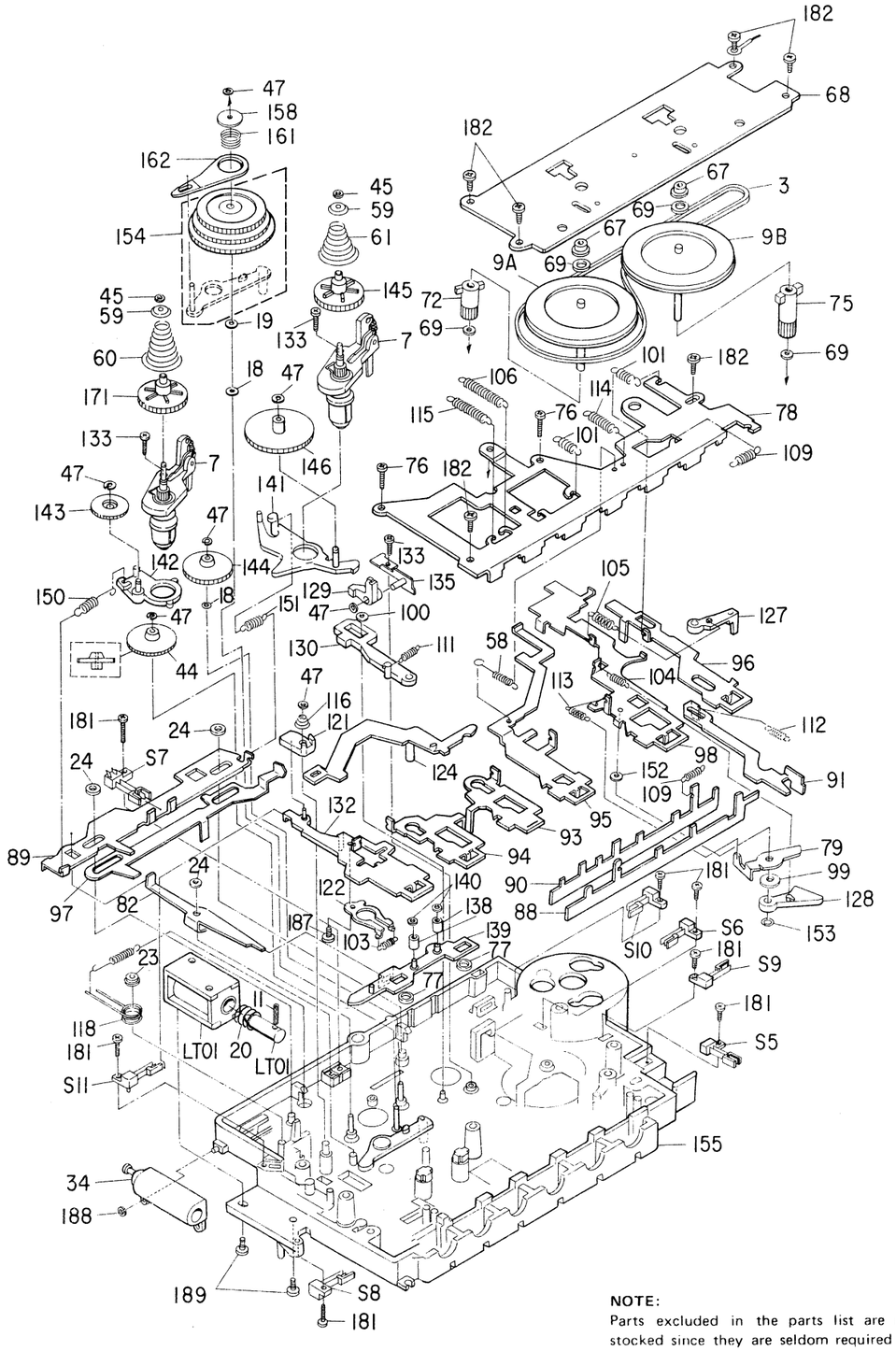
8-1. MECHANISM EXPLODED VIEW (UPPER)



NOTE:
Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Figure 22.

8-2. MECHANISM EXPLODED VIEW (LOWER)



NOTE:
Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Figure 23.

9. PARTS LIST (MECHANISM)

Symbol No.	Part No.	Description
		CASSETTE MECHANISM PARTS
1	25791699	Motor Ass'y
3	25755589	Belt, Drive
4	25791701	Head Ass'y, Record/Playback
5	22218269	Head Ass'y, Erase
6A	25717586	Pressure Roller, Right
6B	25717587	Pressure Roller, Left
7	25712443	Reel Plate Ass'y
9A	25717583	Flywheel Ass'y, Right
9B	25717584	Flywheel Ass'y, Left
11	25727270	Spring
12	25734500	Cover, Mechanism
16	25755590	Belt, Counter
17	25761327	Cushion, Motor
18	25766099	Washer
19	25766112	Washer
20	25777328	Spring, Plunger
21	25779371	Spring
23	25783226	Bushing
24	25783239	Bushing
25	25784104	Button Lever, Play
26	25784105	Pause Lever
27	25784106	Button Lever, Stop
28	25784119	Button, Stop
29	25784120	Button, Record
30	25784121	Button, Play
31	25784122	Button, REW
32	25784123	Button, FF
33	25784124	Button, Pause
34	25791648	Air Damper
35	25873283	Tape Counter
36	25726705	Bushing, Operation Lever
38	25779374	Spring, Operation Lever
39	25784108	Operation Lever
40	25784109	Operation Lever
41	25784118	Button, Manual Reverse
42	25726665	Spacer, ASO Gear
43	25727277	Shaft, REC Lever
44	25756413	Gear, FF
45	25766170	Washer
46	25764594	Washer
47	25766050	Washer
48	25776740	Spring
49	25776646	Spring
51	25776651	Spring
52	25777283	Spring
53	25778140	Spring
54	25778142	Spring, Pressure Roller, L
55	25778143	Spring, Pressure Roller, R
56	25779376	Spring, Holder
57	25784102	Lever, Record
58	25776699	Spring

Symbol No.	Part No.	Description
59	25754468	Gear, Play
60	25777343	Spring, Right
61	25777344	Spring, Left
64	25797001	Cassette Holder Ass'y
65	25797002	Head Lever Ass'y
66	25777334	Spring, Head Lever
67	25725456	Holder
69	25766151	Washer
72	25756386	Gear, Right, Flywheel
75	25756385	Gear, Left, Flywheel
76	22707299	Screw, BID Hd. Tapping, 2d x 8mmℓ
77	25726713	Spacer
79	25747164	Lever, Record Stop
88	25749030	Slider, Switch
99	25766137	Washer
100	25766172	Washer
101	25776633	Spring
102	25776638	Spring
103	25776639	Spring
104	25776641	Spring
105	25776642	Spring
106	25776643	Spring
107	25776644	Spring
108	25776645	Spring
109	25776647	Spring
110	25776648	Spring
111	25776652	Spring
112	25776661	Spring
113	25776662	Spring
114	25776668	Spring
115	25776671	Spring
116	25777239	Spring, Pause
117	25778039	Spring, REC Lock Lever
118	25778141	Spring, High Speed Slider
119	25782557	Lever, Record Lock
121	25784056	Lever, Pause Lock
122	25784091	Lever, Pause Assist
123	25784092	Lock Lever, Switch
124	25784093	Lever, MQSS
125	25784094	Relay Lever, Gear Up
126	25784098	Lever, Release
127	25784099	Stop Lever, Manual
128	25784100	Reverse Lever, Record
129	25784101	Lock Lever, Assist
130	25784103	Assist Lever
133	22707298	Screw, BID Hd. Tapping 2d x 6mmℓ
138	25726719	Bushing, High Speed Shift Slider
140	25766160	Washer
141	25797003	Lever Ass'y, REW
142	25797004	Lever Ass'y, FF

Symbol No.	Part No.	Description
143	25756376	FF Gear
144	25756378	FF Gear
145	25756379	Play Gear
146	25756390	Gear, REW
147	25766163	Washer
150	25776631	Spring
151	25776664	Spring
152	25766042	Washer
154	25713582	Gear Ass'y, Take-up
155	25791700	Chassis Ass'y
158	25754442	Washer, Spring Retainer
159	25776634	Spring
160	25776635	Spring
161	25777266	Spring
162	25784058	Friction Lever
163	25784095	ASO Lever
164	25784096	ASO Release Lever
165	25784097	ASO Select Lever
166	22703118	Retaining Ring, 2mmd
167	25748993	Relay Lever, Right
168	25756381	Release Gear
169	25757129	Steel Ball, 2mmd
170	25766097	Washer
171	25756411	Play Gear
172	25776636	Spring
173	25777284	Spring
174	25784107	Manual Lever, Release
175	25784110	Release Lever
180	22707747	Screw, Special
181	22707870	Screw, PAN Hd., Tapping, 2d x 8mmℓ
182	22707301	Screw, BID Hd. Tapping, 2.6d x 8mmℓ
183	22707367	Screw, DTBID, 2.6d x 8mmℓ
184	22707278	Screw, BID Hd., 2d x 3mmℓ
185	22707265	Screw, BID Hd., 2d x 4mmℓ
187	22707426	Screw, DTBID Hd., 2d x 5mmℓ
188	20798037	Ring
189	22707475	Screw, BID Hd., 2.6d x 4mmℓ
190	22707265	Screw, BID Hd., 2d x 4mmℓ
192	25776708	Spring

10. CABINET EXPLODED VIEW

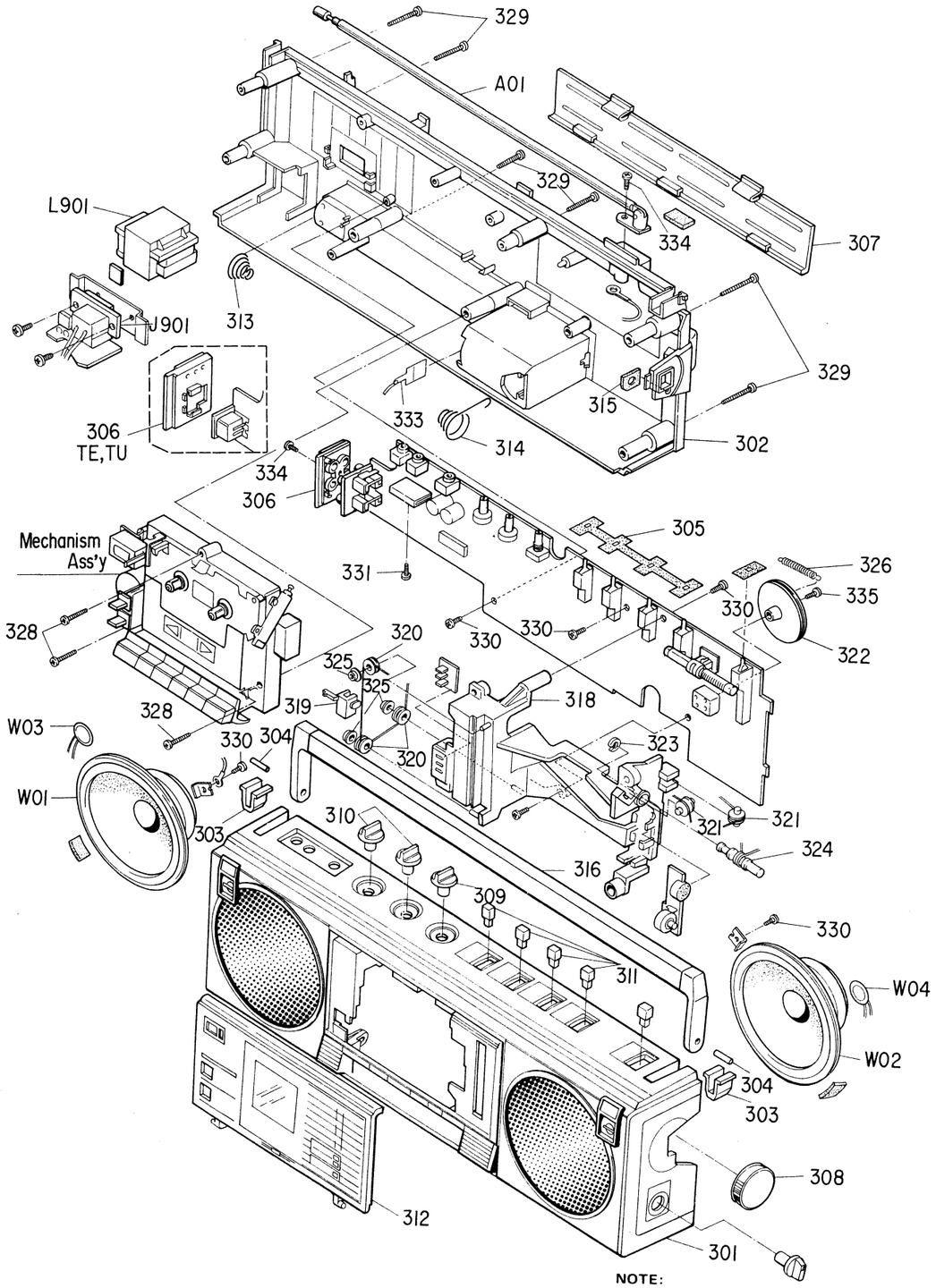


Figure 24.

NOTE:
Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

11. PARTS LIST (CABINET)

Symbol No.	Part No.	Description
		CABINET PARTS
301	25883168	Front Cabinet Ass'y, TA, TC
301	25883170	Front Cabinet Ass'y, VF
301	25883469	Front Cabinet Ass'y, AY
301	25883538	Front Cabinet Ass'y, TA
301	25883463	Front Cabinet Ass'y, K-VF
301	25883460	Front Cabinet Ass'y, R-VF
301	25883466	Front Cabinet Ass'y, G-VF
302	25883171	Back Cabinet Ass'y, TA, TC
302	25883369	Back Cabinet Ass'y, AY
302	25883393	Back Cabinet Ass'y, VF
302	25883556	Back Cabinet Ass'y, TA
302	25883465	Back Cabinet Ass'y
302	25883462	Back Cabinet Ass'y, R-VF
303	25835534	Retainer, Handle
304	25847292	Shaft, Handle
305	25857210	Cover, Switch
306	25864333	Pin, Jack Plate
307	25882359	Cover, Battery, AY
307	25882738	Cover, Battery, TA
307	25882493	Cover, Battery, K-VF, G-VF
307	25882359	Cover, Battery, R-VF
308	25886196	Knob, Tuning
309	25886081	Knob, Volume, Large
310	25886082	Knob, Volume, Small
311	25886083	Knob, Lever
312	25883173	Cover Ass'y, Cassette, TA, TC, AY
312	25883470	Cover Ass'y, Cassette, AY
312	25883175	Cover Ass'y, Cassette, VF
312	25883539	Cover Ass'y, Cassette, TA
312	25883464	Cover Ass'y, Cassette, K-VF
312	25883461	Cover Ass'y, Cassette, R-VF
312	25883467	Cover Ass'y, Cassette, G-VF
313	25777290	Spring, Battery
314	25777291	Spring, Battery
315	25857223	Cushion, Microphone
316	25815263	Handle Ass'y, TA, TC, AY
316	25883143	Handle Ass'y, TA, K-VF, G-VF
316	25883081	Handle Ass'y, R-VF, S-AY
317	25883329	Grille Ass'y, LED
318	22714262	Frame
319	22741436	Pointer
320	22742110	Pulley
321	22742287	Pulley
322	22742300	Dial Drum
323	22743307	Retainer, Tuning Shaft
324	22743320	Tuning Shaft
325	25783226	Bushing
326	25776604	Spring
327	22707316	Screw, BID Hd. 2d x 6mmℓ
328	22707805	Screw, DTBID Hd. Tapping, 3d x 20mmℓ
329	22707810	Screw, DTBID Hd. Tapping, 3d x 35mmℓ
330	22707826	Screw, BID Hd. Tapping, 3d x 10mmℓ
331	22707846	Screw, BID Hd. Tapping, 3d x 8mmℓ
333	25864166	Contact, Battery
334	22707801	Screw, BID Hd. Tapping, 3d x 12mmℓ
335	22707670	Screw, PAN Hd. 1.7 x 4mmℓ
336	22707842	Screw, BID Hd. Tapping, 3d x 8mmℓ
337	22707910	Screw, BID Hd. Tapping, 3d x 6mmℓ
338	22707445	Screw, BID Hd. Tapping, 3d x 6mmℓ, AY
340	25886202	Knob, Fine Tuning
341	25808734	Nameplate, TA
341	25808735	Nameplate, TC
341	25808736	Nameplate, AY
341	25808905	Nameplate, K-TA

12. PARTS LIST

CAUTION: The ⚠ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
		TRANSISTORS, ICS & DIODES
Q001	B0325500	IC, TA7358P
Q002	A6042639	Transistor, 2SK161-Y
Q101	B0356385	IC, TA7640AP
Q102	A6317460	Transistor, 2SC1815NEW-GR
Q201	B0325350	IC, TA7343P
Q301	B0319970	IC, TA7233P
Q401	B0356695	IC, TA7668BP
Q402	A6534060	Transistor, 2SA1015-GR
Q403, 404, 405, 406	A6342210	Transistor, 2SC2878-B
Q407, 408	A6048310	Transistor, 2SK30A-TM, R
Q409, 410	A6317460	Transistor, 2SC1815NEW-GR
Q501	A6317460	Transistor, 2SC1815NEW-GR
Q502	A6319300	Transistor, 2SC1959NEW-Y
Q503	A6534060	Transistor, 2SA1015-GR
Q701	B0325320	IC, TA7341P
Q702	A6333320	Transistor, 2SC2655-Y
Q901	A6319300	Transistor, 2SC1959NEW-Y
D001	A7160570	Diode, 1SS176
D002	A7289000	Diode, 1S2236
D004	A7289000	Diode, 1S2236
D101	A8606630	Diode, LED, TLG205, GRN
D201	A8603110	Diode, LED, TLR205, RED
D401, 402, 403	A7160570	Diode, 1SS176
D501, 502	A7160570	Diode, 1SS176
D701, 702, 703, 704, 705, 707, 710, 711, 712	A7160570	Diode, 1SS176
D713	A7246703	Diode, 1S1555V
D901	A8603110	Diode, LED, TLR205, RED
D902	A7110023	Diode, Zener, 05Z5.1
⚠ D903	A7682018	Diode, 1B2C1
⚠ D904	A7682057	Diode, 1B2Z1
		COILS & TRANSFORMERS
L001	22294441	Coil, Antenna, FM
L002	22294462	Coil, Oscillator, FM
L004	22282238	Coil, Antenna, SW1
L005	22282239	Coil, Antenna, SW2
L006	22245385	Coil, Oscillator, MW
L007	22285320	Coil, Oscillator, SW2
L008	22242990	Coil, Antenna, MW
L014	22285319	Coil, Oscillator, SW1

Symbol No.	Part No.	Description
L016	22291188	Coil, Choke, FM
L101	22265821	IF Transformer, FM
L102	22265822	IF Transformer, FM
L103	22264837	IF Transformer, AM
L104	22264838	IF Transformer, AM
L501	22235227	Coil, Oscillator, Tape
L901	22224294	Power Transformer, TA, TC
⚠ L901	22224295	Power Transformer, AY
⚠ L901	22224296	Power Transformer, VF
		ELECTRICAL PARTS
S1 1 to 8	22196342	Lever Switch, Function
S2 1 to 2	22196340	Lever Switch, Band Select
S3 1 to 3	22196231	Lever Switch, Mode/Beat Proof
S4 1 to 2	22196341	Lever Switch, Tape Select
S5	22196323	Leaf Switch, Power
S6	22196063	Leaf Switch, Record/ Playback
S7	22196305	Leaf Switch, FF/REW
S8	22196063	Leaf Switch, Forward/ Reverse
S9	22196063	Leaf Switch, Forward/ Reverse Muting
S10	22196305	Leaf Switch, Pause
S11	22196063	Leaf Switch, Record
S12 1 to 3	22196232	Lever Switch, AM Band Select
A01	22124711	Rod Antenna
W01, 02	22152491	Speaker, Woofer, 100mmd
W03, 04	22152452	Speaker, Tweeter, 20mmd
Z001	22153121	Filter, Bypass, FM
Z101	22153249	Filter, Ceramic, FM
Z102	22153070	Filter, Ceramic, AM
G01	22154233	Built-in Microphone
⚠ F901	22144337	Fuse, 1A/250V, Time Lug, AY
J02, 03	22198016	Jack, 3.5mmd, Ext Microphone
J04	22163887	Jack, US-4P, Line Output/ Ext. Input
J05	22198015	Jack, 3.5mmd, Headphone
⚠ J901	22169053	AC Socket, AC-3P, TA, TC
⚠ J901	22167820	AC Socket, AC-2P, AY
⚠ J901	22167990	AC Socket, AC-3P, VF

Symbol No.	Part No.	Description
EP01	22165047	Holder, Fuse, AY
EP02	22167688	Back Cover, Jack, AY

CAPACITORS

D = ±0.5%, J = ±5%, K = ±10%, M = ±20%, Z = −20+80%

ABBREVIATIONS: CD = Ceramic Disk
PF = Plastic Film
EL = Electrolytic

C001, 002, 003, 004, 005, 017	22308434	Variable Capacitor
C006/007	22309183	Trimmer Capacitor MW/SW2 Ant.
C008	22361509	CD, 5pF, D, 50V
C009	22361120	CD, 12pF, J, 50V
C013/014	22309183	Trimmer Capacitor MW/SW2 Osc.
C015	22321050	PF, 360pF, J, 50V
C016	22360325	PF, 4700pF, M, 25V
C018	22321058	PF, 1200pF, J, 50V
C019	22361240	CD, 24pF, J, 50V
C020	22360091	CD, 20pF, J, 50V
C021	22362820	CD, 82pF, K, 50V
C022	22361330	CD, 33pF, J, 50V
C023	22360177	CD, 15pF, J, 50V (UJ)
C025	22360177	CD, 15pF, J, 50V (UJ)
C026	22360776	CD, 7pF, D, 50V
C027	22361509	CD, 5pF, D, 50V
C028	22342103	CD, 0.01mfd, Z, 50V
C030	22361150	CD, 15pF, J, 50V
C034	22361309	CD, 3pF, D, 50V
C046	22349471	CD, 470pF, K, 50V
C047	22349471	CD, 470pF, K, 50V
C048	22342103	CD, 0.01mfd, Z, 50V
C049	22342103	CD, 0.01mfd, Z, 50V
C050	22361509	CD, 5pF, D, 50V
C051	22360136	CD, 33pF, J, 50V (CH)
C052	22342223	CD, 0.022mfd, Z, 50V
C053	22361509	CD, 5pF, D, 50V
C054	22342223	CD, 0.022mfd, Z, 50V
C055	22342223	CD, 0.022mfd, Z, 50V
C101	22342103	CD, 0.01mfd, Z, 50V
C102	22342103	CD, 0.01mfd, Z, 50V
C103	22349471	CD, 470pF, K, 50V
C104	22360329	PF, 0.022mfd, M, 25V
C105	22342223	CD, 0.022mfd, Z, 50V
C106	22483101	EL, 100mfd, 10V
C107	22342223	CD, 0.022mfd, Z, 50V
C108	22485100	EL, 10mfd, 16V
C109	22485220	EL, 22mfd, 16V
C110	22342223	CD, 0.022mfd, Z, 50V

Symbol No.	Part No.	Description
C111	22488339	EL, 3.3mfd, 50V
C112	22488108	EL, 0.1mfd, 50V
C113	22488478	EL, 0.47mfd, 50V
C114	22360330	PF, 0.033mfd, M, 25V
C201	22483101	EL, 100mfd, 10V
C202	22488339	EL, 3.3mfd, 50V
C203	22488109	EL, 1mfd, 50V
C204	22321032	PF, 1000pF, K, 50V
C205	22488109	EL, 1mfd, 50V
C206	22488339	EL, 3.3mfd, 50V
C207, 208	22360329	PF, 0.022mfd, M, 25V
C209, 210	22360327	PF, 0.01mfd, M, 25V
C301, 302	22349222	CD, 2200pF, K, 50V
C303, 304	22342223	CD, 0.022mfd, Z, 50V
C307, 308	22360331	PF, 0.047mfd, M, 25V
C309, 310	22488339	EL, 33mfd, 50V
C311, 312	22349332	CD, 3300pF, K, 50V
C313, 314	22483330	EL, 33mfd, 10V
C315, 316	22483101	EL, 100mfd, 10V
C317	22483470	EL, 47mfd, 10V
C319, 320	22370323	PF, 0.15mfd, K, 50V
C322	22482222	EL, 2200mfd, 6.3V
C401, 402	22372182	PF, 1800pF, K, 50V
C403, 404	22349472	CD, 4700pF, K, 50V
C405, 406	22440442	EL, 3.3mfd, 50V
C407, 408	22360328	PF, 0.015mfd, M, 25V
C409, 410	22342103	CD, 0.01mfd, Z, 50V
C411	22360543	PF, 8200pF, K, 25V
C412	22360326	PF, 6800pF, M, 25V
C413, 414	22361680	CD, 68pF, J, 50V
C415, 416	22440442	EL, 3.3mfd, 50V
C417, 418	22349152	CD, 1500pF, K, 50V
C420	22440442	EL, 3.3mfd, 50V
C419	22488339	EL, 3.3mfd, 50V
C421	22483331	EL, 330mfd, 10V
C422	22440462	EL, 100mfd, 10V
C423	22440450	EL, 47mfd, 10V
C427	22360329	PF, 0.022mfd, M, 25V
C428	22342223	CD, 0.022mfd, Z, 50V
C429	22483470	EL, 47mfd, 10V
C430, 431	22440604	EL, 47mfd, 10V
C501	22483470	EL, 47mfd, 10V
C502	22372822	PF, 8200pF, K, 50V
C503	22349471	CD, 470pF, K, 50V
C504	22349221	CD, 220pF, K, 50V
C505	22371222	PF, 2200pF, J, 50V
C506	22485220	EL, 22mfd, 16V
C701	22349222	CD, 2200pF, K, 50V
C702	22440444	EL, 10mfd, 16V
C703	22488339	EL, 3.3mfd, 50V
C704	22349472	CD, 4700pF, K, 50V
C705	22488339	EL, 3.3mfd, 50V
C901	22483471	EL, 470mfd, 10V

Symbol No.	Part No.	Description
C902	22440604	EL, 2200mfd, 16V
C903, 904	22342223	CD, 0.022mfd, Z, 50V
C905, 906	22342223	CD, 0.022mfd, Z, 50V
C907, 908	22342223	CD, 0.022mfd, Z, 50V

RESISTORS

1. **Resistors are Fixed Carbon Film 1/6W, ±5%, unless otherwise noted.**
2. **PRC is short for the printed resistor circuit. If replacement of the resistor in PRC is required, please use the substitutional fixed carbon film resistor of 1/6W, ±5% according to the following list.**
   K = 1000, M = 1000000

R001	22584102	1K ohm
R002	22584101	100 ohm
R003	22584470	47 ohm
R004	22584222	2.2K ohm (PRC)
R005	22584391	390 ohm (PRC)
R006	22584271	270 ohm (PRC)
R007	22584470	47 ohm (PRC)
R008	22584223	22K ohm
R009	22584223	22K ohm
R101	22584151	150 ohm (PRC)
R102	22584223	22K ohm (PRC)
R103	22584104	100K ohm (PRC)
R104	22584224	220K ohm (PRC)
R105	22584104	100K ohm (PRC)
R106	22584681	680 ohm (PRC)
R107	22584154	150K ohm
R108	22584472	4.7K ohm (PRC)
R109	22584472	4.7K ohm (PRC)
R110	22584470	47 ohm (PRC)
R111	22584223	22K ohm (PRC)
R112	22584470	47 ohm
R113	22651582	Variable, 50K-B, Fine Tuning
R115	22584104	100K ohm (PRC)
R119	22584153	15K ohm (PRC)
R201	22584102	1K ohm (PRC)
R202	22555820	82 ohm, 1/4W
R203	22584562	5.6K ohm
R204	22658599	Semi-fixed Variable 10K-B, Free Run
R205	22584681	680 ohm
R206	22584154	150K ohm
R207, 208	22584332	3.3K ohm (PRC)
R209, 210	22584471	470 ohm (PRC)
R211, 212	22584473	47K ohm (PRC)
R301, 302	22584223	22K ohm
R303/304	22651583	Variable, 50K-A, Tone
R305, 306	22584472	4.7K ohm (PRC)
R307/308	22651585	Variable, 50K-B, Volume

Symbol No.	Part No.	Description
R311, 312	22584151	150 ohm
R314	22584121	120 ohm (PRC)
R315, 316	22584101	100 ohm
R401, 402	22584123	12K ohm
R403	22584102	1K ohm
R404	22584102	1K ohm (PRC)
R405, 406	22584562	5.6K ohm (PRC)
R407, 408	22584474	470K ohm (PRC)
R409, 410	22584562	5.6K ohm
R411, 412	22584472	4.7K ohm
R413	22584103	10K ohm
R414	22584153	15K ohm
R415, 416	22584472	4.7K ohm
R417, 418	22584334	330K ohm
R419, 420	22584470	47 ohm
R421	22584104	100K ohm (PRC)
R422	22584474	470K ohm (PRC)
R423	22584332	3.3K ohm (PRC)
R424	22584225	2.2M ohm
R427	22651582	Variable, 50K-B, Balance
R431, 432	22584102	1K ohm (PRC)
R433, 434	22584473	47K ohm (PRC)
R435, 436	22584331	330 ohm (PRC)
R437	22584562	5.6K ohm
R438	22584102	1K ohm (PRC)
R439	22584332	3.3K ohm
R440	22584332	3.3K ohm (PRC)
R441	22584332	3.3K ohm (PRC)
R442	22584102	1K ohm (PRC)
R501	22584102	1K ohm
R502	22584332	3.3K ohm
R503	22584821	820 ohm
R504	22584391	390 ohm
R505	22584101	100 ohm
R506	22584683	68K ohm (PRC)
R507	22584560	56 ohm
R508	22584104	100K ohm (PRC)
R509	22584332	3.3K ohm (PRC)
R510	22584474	470K ohm (PRC)
R511	22543470	47 ohm
R702	22584104	100K ohm (PRC)
R703	22584183	18K ohm (PRC)
R704	22584101	100 ohm
R705	22584473	47K ohm (PRC)
R706, 707	22584102	1K ohm (PRC)
R709	22584474	470K ohm (PRC)
R710	22584103	10K ohm (PRC)
R901	22584151	150 ohm
R904	22543470	47 ohm, 1/4W

Symbol No.	Part No.	Description
		ACCESSORIES
⚠ AC01	22176663	Power Supply Cord, TA, TC
⚠ AC01	22176614	Power Supply Cord, AY
⚠ AC01	22176615	Power Supply Cord, VF
AC02	22903885	Owner's Manual, TA, TC
AC02	22903886	Owner's Manual, AY
AC02	22903887	Owner's Manual, VF
AC03	22105373	Demonstration Tape, C07, VF

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2-1, GINZA 5-CHOME, CHUO-KU, TOKYO 104, JAPAN